PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants: Mitchel Kriss, *et al.*	)
Serial No.: 09/329,487	)
Filed: June 10, 1999	)
For: **METHOD AND SYSTEM FOR MARKET RESEARCH DATA MINING**	)
Group Art Unit: 3744	)
Examiner: M. Norman	)
Conf. No.: 8147	)
Attorney Docket No.: 29284/35302	)

APPELLANTS' BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the provisions of 37 CFR §41.37, Appellants submit the following brief.

1. Real Party in Interest

The real party in interest is A.C. Nielsen Co. of Schaumberg, IL, a Delaware corporation.

2. Related Appeals and Interferences

There are no other appeals and interferences known to Appellants, Appellants' legal representatives or assignees which will directly affect or be affected by or have a bearing on the Board's decision in the pending appeal.

3. Status of Claims

Claims 1-53 are finally rejected and the final rejection thereof is being appealed.

4. Status of Amendments

All amendments submitted prior to this brief have been entered.

5. Summary of Claimed Subject Matter

According to page 6, line 7 to page 8, line 2 of the present application, purchases made by the customers of a product supplier of interest from other product suppliers may be estimated based upon first and second data. Using the simple example of retailers as product suppliers, one retailer using the present invention can estimate the purchases that its customers make from other retailers.

The first data is panelist data. Panelist data is collected from a panel selected from the customer base of the product supplier of interest. Panelist data includes not only purchases that the panelists make from the product supplier of interest, but also purchases that the panelists make from the other product suppliers. The panelists' unique panelist IDs are also collected so that

the panelist data can be associated with the panelists from whom the purchase data is collected.

The second data is customer data. Customer data includes purchases that the customers of the product supplier of interest make from the product supplier of interest. The customer data also includes the IDs that are unique to each of the customers of the product supplier of interest.

Typically, although not necessarily, the pool of panelists from which the panelist data is collected is smaller than the pool of customers from which the customer data is collected.

Based upon the panelist data and the customer data, purchases that the customers of the product supplier of interest make from the other product suppliers can be estimated.

According to page 8, line 3 to page 26, line 22 of the present application, this estimate may be made with the aid of a computing system 10 as shown in Figure 1 programmed in accordance with the flow chart shown in Figures 2A and 2B. The panelist data is read at 20 of the flow chart and is aggregated at 22 by panelist ID and by product category (such as carbonated beverages or breakfast cereals). The panelist data in each product category is further divided by dollars spent in each product category by trip to the product supplier of interest, by dollars spent in each product category by trip to the other product suppliers, by total dollars spent with the product supplier of interest by panelist ID across all product categories, and by total dollars spent with the other product suppliers by panelist ID. The panelist data is also aggregated by department, where

each department covers one or more related product categories. The aggregated panelist data also includes a product supplier of interest share for each product category.

At 24, the customer data is read from the data warehouse 14. At 26, the customer data is aggregated by customer ID in the same manner as described above in connection with 22.

At 28, an unrotated principal components factor analysis is performed on the aggregated customer data. The unrotated principal components factor analysis produces a factor matrix having k rows and i columns, where k is the number of customer IDs, and where i is the number of factors resulting from the unrotated principal components factor analysis.

At 30, the k x i factor matrix is used to score the panelist data by matrix multiplying the factor matrix produced at 28 and a k x j panelist data matrix, where j is the number of dimensions of the panelist data. This matrix multiplication generates a panelist set of factors F_1 through F_i for each panelist ID. These panelist factors F_1 through F_i are part of the panelist predictor variables discussed below.

At 32, the k x i factor matrix is also used to score the customer data by matrix multiplying the factor matrix produced at the block 28 and a k x j customer data matrix, where j is the number of dimensions of the customer data. This matrix multiplication generates a customer set of factors F_1 through F_i for each customer ID. These customer factors F_1 through F_i are part of the customer predictor variables discussed below.

For each panelist, other panelist predictor variables are created at 34. These other panelist variables are determined from the panelist data and include (i) F_1^2 through F_i^2, which are the squares of the factors created at 30, (ii) interdependent factors F_1 x F_2, F_1 x F_2, . . . F_1 x F_i, F_2 x F_3, F_2 x F_4, . . . F_2 x F_i, F_3 x F_4, . . . F_{i-1} x F_i, (iii) the total trips T_1, T_2, ..., T_j in the j product categories, (iv) the squares T_1^2, T_2^2, ..., T_j^2, (v) the sum of the dollars TD spent by each panelist in all product categories, (vi) the square TD^2, (vii) the dollars spent CD_1, CD_2, ..., CD_j by the panelists with the product supplier of interest in the j product categories, and/or (viii) the dollars spent CO_1, CO_2, ..., CO_j by the panelists with the other product suppliers in the j product categories.

Similar other customer predictor variables are created at 36 for each product category.

A set of criterion variables CV_i is created at 38 for each product category by dividing the panelist IDs into buckets according to their values of CO_j. Thus, for a first product category, a bucket zero contains all panelist IDs whose corresponding value of $CO_1 = 0$. The remaining panelist IDs are sorted from highest to lowest according to their values of CO_1 and are then divided evenly into buckets one through n for the first product category, with bucket one containing the remaining panelist IDs whose values of CO_1 are lowest (other than zero), with bucket two containing the remaining panelist IDs whose values of CO_1 are next lowest, and so on. Certain constraints disclosed in the application are placed on the formation of these buckets.

The criterion variable CV_0 for the first product category is set equal to the number of panelist IDs in the bucket zero, the criterion variable CV_1 for the first product category is set equal to the number of panelist IDs in the bucket one, and so on.

This process is repeated for each of the other product categories.

At 40, the panelist data is split between model data and leave out data. All panelist data associated with a randomly selected r% of the panelist IDs are designated as leave out data. The value of r, for example, may be 15, so that all panelist data associated with 15% of the panelist IDs selected at random are designated as leave out data. The remaining panelist data is designated as model data.

At 42, scoring rules are determined for the first product category from the model data based on the panelist IDs in the bucket zero. For example, a commercially available software program entitled "Wizwhy" supplied by WizSoft can be used to determine these scoring rules. Wizwhy creates two kinds of if-then scoring rules, i.e., "is if-then" scoring rules and "is not if-then" scoring rules. An "is if-then" scoring rule, for example, has the following format: if dollars are greater than 100, then the output is true (1), otherwise the output is false (0). Similarly, an "is not if-then" scoring rule, for example, has the following format: if dollars are less than 50, then the output is false (0), otherwise the output is true (1).

Next, similar scoring rules for the first product category are determined at 42 based on the

panelist IDs in bucket one. An iteration of 42 is similarly executed for each of the other buckets.

This process is then repeated for each of the other product categories.

At 44, new panelist predictor variables are created based upon both the model data and the leave out data by using first the “is if-then” scoring rules and then the “is not if-then” scoring rules generated at 42 in order to score the model data and the leave out data by bucket and by product category. That is, the model data and the leave out data which are in the first product category and which relate to the panelist IDs in bucket zero are first supplied to the “is if-then” scoring rules and the outputs (0’s and 1’s) are summed. This sum is a first new panelist predictor variable relating the data in the first product category and corresponding to the panelist IDs in bucket zero.

This process is repeated for each of the other buckets.

Then, the model data and the leave out data in the first product category and relating to the panelist IDs in the bucket zero are supplied to the “is not if-then” scoring rules and the outputs (0’s and 1’s) are summed. This sum is a second new panelist predictor variable relating to data which are in the first product category and which correspond to the panelist IDs in the bucket zero.

This process is repeated for each of the other buckets.

Then, these two processes are repeated for each of the other product categories.

At 46, new customer predictor variables are created based upon the customer data in a similar manner. However, in this case, there are no buckets. Thus, the creation of two new customer predictor variables per product category is effected by using first the “is if-then” scoring rules and then the “is not if-then” scoring rules generated at 42 in order to score the customer data for each corresponding product category.

At 48, a linear relationship by product category between purchases made by panelists from the supplier of interest and purchases made by the panelists from the other suppliers is determined. For example, the subroutine Proc Reg of the commercially available program SAS may be performed to make this determination. The Proc Reg subroutine is a linear regression that is performed based only on the model data and that generates an output coefficient matrix. Each row of this matrix contains a set of coefficients for a corresponding product category. The Proc Reg subroutine uses the following equation:

$$model\ depvar = indepvar\ /maxr\quad stop = i$$

where depvar are the criterion variables by product category determined at 38, and where indepvar are the predictor variables created at 44 by product category.

This linear relationship is used at 50 to forecast or estimate the purchases made by the customers of the supplier of interest from the other suppliers. At 50, the new customer predictor variables determined at 46 are the inputs for the variables in the linear relationship determined at 48 in order to estimate (i.e.,

forecast) the sales to the customers of the supplied of interest by the other product suppliers in each of the product categories.

6. <u>Grounds of Rejection to be Reviewed on Appeal</u>

Claims 1-53 are rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter.

7. <u>Argument</u>

<u>Independent claim 1</u> - The Examiner asserts that the estimating of purchases limitation in independent claim 1 is not a tangible result or output and that, therefore, the claim is not directed to statutory subject matter.

This assertion is incorrect.

In fact, the case presented by independent claim 1 is a fairly close analog of the cases considered by the CAFC in State Street Bank and Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998), and in AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999).

In the State Street case, the claimed invention involved making calculations related to a fund financial services configuration. This configuration allows several funds to be pooled into a single portfolio. Assets for two or more funds in the same portfolio are allocated daily by determining the percentage share of each fund in the portfolio, while taking into consideration daily changes both in the value of the funds and in the amount of each fund's assets.

In determining these daily changes, the daily income, expenses, and net realized and unrealized gain or loss of the portfolio are allocated among its funds. Accordingly, the true asset value of each fund can be determined, and the allocation ratios between the funds can be accurately calculated. Also, the data determined on a daily basis for each fund is tracked so that the aggregate year end income, expenses, and capital gain or loss can be determined for accounting and for tax purposes.

These calculations have to be quickly and accurately made because shares of each fund are sold to the public, and the value of these shares is based on the fund's percentage in the portfolio. Given the complexity of the calculations, a computer or equivalent device was considered a virtual necessity.

The relevant portion of the independent claim considered by the State Street court may be paraphrased as follows:

> means for allocating the percentage share that each fund holds in the portfolio to each fund based the assets in the portfolio and the increases or decreases in each of the funds' assets from a previous day;
>
> means for allocating daily incremental income, expenses, and net realized gain or loss for the portfolio among each fund in the portfolio;
>
> means for allocating the daily net unrealized gain or loss for the portfolio among each fund in the portfolio; and,
>
> means for aggregating the year-end income, expenses, and capital gain or loss for the portfolio and for each of the funds in the portfolio.

Based on this invention, the State Street court made the following holding: "we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces 'a useful, concrete and tangible result' - a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." State Street, 47 USPQ2d at 1601.

In other words, data was transformed from one form of data to another form of data. Thus, various data was aggregated and allocated so as to determine other data, i.e., a final share value of each fund in a portfolio of funds. This final share value was determined by the court to be a tangible result.

The independent claim at issue in State Street is a means plus function claim, whereas independent claim 1 of the present application is a method claim. However, the State Street court stated that "for the purposes of a §101 analysis, it is of little relevance whether claim 1 is directed to a 'machine' or a 'process,' as long as it falls within at least one of the four enumerated categories of patentable subject matter, 'machine' and 'process' being such categories." State Street, 47 USPQ2d at 1600.

Thus, according to State Street, the analysis of whether a claim is directed to statutory subject

matter does not depend on whether the claim is for an apparatus or a method.

Later, the CAFC in the AT&T case, which had before it a method claim instead of an apparatus claim, affirmed its view that the analysis of whether a claim is directed to statutory subject matter does not depend on whether the claim is directed to an apparatus or to a method.

The invention considered in AT&T involved the addition of data (a "PIC indicator") to other data in the form of a standard message record. The PIC indicator indicates whether a call involves a particular PIC (primary interexchange carrier). The PIC indicator aids long-distance carriers in providing differential billing treatment for subscribers, depending upon whether a subscriber calls someone with the same or a different long-distance carrier.

Independent claim 1 considered by the AT&T court may be paraphrased as follows:

> A method for use in a telecommunications system comprising the steps of:
>
> generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and
>
> including a PIC indicator in the message record indicating whether or not the interexchange carrier associated with the terminating subscriber is a predetermined interexchange carrier.

Appellants in AT&T argued that this claim does not involve the physical transformation or conversion of subject matter from one state into another. The AT&T

court, however, rejected the idea that the thing being transformed has to be an article in order for the claim to be statutory, holding instead that a claimed process for transforming data from one "form" to another performs a physical transformation and satisfies the requirements of §101. In this case, the data represented by the message record was transformed when other data was added to it.

Moreover, the AT&T court implicitly held that the transformed data, i.e., the message record with the PIC indicator, was a tangible result.

In independent claim 1 of the present application, various data are transformed into other data. That is, panelist data and customer data are transformed into other data, i.e., an estimate. The panelist data relates to the purchases that panelists make both from the supplier of interest and from other suppliers. The customer data relates to the purchases that customers of the supplier of interest make from the supplier of interest. The other data (estimate) signifies the purchases that the customers of the supplier of interest make from other suppliers.

Therefore, according to the State Street and AT&T decisions, independent claim 1 of the present application is directed to statutory subject matter because it relates to the transformation of data into other data.

Moreover, like the final share value produced by the invention considered in State Street and the modified message record produced by the invention considered in AT&T, the estimate produced by the

invention of independent claim 1 of the present application is a tangible result.

In State Street, the final share value was useful by regulatory authorities and in subsequent trades. The modified message record in AT&T was useful in billing. The estimate produced by the invention of independent claim 1 of the present application is useful to a product supplier to, for example, determine the effectiveness of marketing campaigns. For example, a retailer may determine the effectiveness of its promotional campaigns on its customers with respect to one or more of its product categories by periodically tracking the purchases that its customers are making from it in those product categories versus the purchases that its customers are making from its competitors in those same product categories.

Therefore, according to State Street and AT&T, independent claim 1 of the present application is directed to statutory subject matter because it produces a tangible result.

The Examiner asserts that independent claim 1 does not recite a tangible result and that it must do so in order to be directed to statutory subject matter. There are two ways to view tangible results. Either the tangible results are the data resulting from the transformation of other data, or the tangible results are the utility of the data resulting from the transformation of other data.

In one alternative, independent claim 1 of the present application recites a tangible result because it recites the estimate resulting from the transformation of the panelist data and the customer data. Similarly, the

claim considered in State Street implicitly recited the tangible result of a final share value, and the claim considered in AT&T recited the tangible result of a modified message record.

Therefore, in this one alternative, independent claim 1 recites a tangible result in the same manner that the claims considered by the CAFC in State Street and AT&T recite a tangible result.

In the other alternative, independent claim 1 of the present application does not recite a tangible result because the tangible result is the utility (e.g., market campaign evaluation) of the estimate. Similarly, the claim considered in State Street does not recite a tangible result because the tangible result is the utility (e.g., used by regulatory authorities and in subsequent trades) of the final share value, and the claim considered in AT&T does not recite a tangible result because the tangible result is the utility (e.g., used for billing) of the modified message record.

Therefore, in this other alternative, independent claim 1 is not required under State Street and AT&T to recite a tangible result.

Thus, the Examiner's implicit assertion that independent claim 1 of the present application must expressly recite a tangible result is not correct.

Moreover, Section 2106 of the MPEP makes it clear that a tangible result need not be recited in the claims or even disclosed in the application. This section of the MPEP notes that one obligation of an Examiner is to identify and understand the practical application of the invention, i.e., the "useful, concrete and tangible result" of the invention. This section goes

on to state that this practical application need not necessarily be disclosed in the application itself.

In the present application, the disclosure of the present application in fact contains an indication of the practical application for the claimed invention. Specifically, the present application discloses a very practical application for the claimed invention. A retailer might know what products it sells to its customers. This same retailer might also know, from market share data, what customers in general (such as the panelists) purchase from retailers in general. However, without the benefit of the present invention, the retailer cannot know from its own sales and from market share information the purchases that its customers make from competitive retailers. The invention recited in independent claim 1 of the present application makes up for this deficiency by providing an output in the form of an estimate that gives the retailer this knowledge.

It cannot be doubted that this output is highly valuable and tangible to the retailer. Because of this output, the retailer can, for example, benchmark the effectiveness of its marketing strategies.

Accordingly, as established by Section 2106 of the MPEP, because the present invention is highly practical, it produces a "useful, concrete and tangible result." Therefore, the claimed invention is directed to statutory subject matter.

The claimed invention is indeed significantly functional. It reads in data and transforms that data into an output (i.e., an estimation) that did not exist in the input data. Accordingly, the input data is transformed into a new, non-obvious, and very useful

output (i.e., an estimation of the purchases made by the customers of one supplier from other suppliers).

Further, Section 2106 of the MPEP gives several examples illustrating claimed inventions that have a practical application because they produce useful, concrete, and tangible results. One example is the State Street case in which input data representing discrete dollar amounts is transformed into an output representing a final share value. This data transformation was found to constitute a practical application producing a useful, concrete and tangible result even though the utility of the resulting data was not recited in the claims. Similarly, the present claims involve transforming input data representing purchases made by certain purchasers into an output representing other purchases.

Therefore, according to this example, the claimed invention is directed to statutory subject matter.

A further obligation of the Examiner under Section 2106 of the MPEP is to review software related claims in order to identify the protection sought by the applicant, to understand how the claims relate to and define the invention, and to search the prior art. With respect to this obligation, it is noted that the present application has had extensive prior art examination and that the Examiner has found the claims to be patentable over the prior art.

Section 2106 of the MPEP goes on to state that the plain and unambiguous meaning of section 101 is that any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if it meets the requirements for

patentability, and to further state that the subject matter that courts have found to be outside the statutory categories of invention is limited to abstract ideas, laws of nature, and natural phenomena.

The Examiner does not assert that the claimed invention is a law of nature or a natural phenomena. However, the Examiner only asserts that the claimed invention is directed to an abstract manipulation of data. But, as indicated above, the input data to the claimed method is manipulated in a very concrete way to produce a very tangible result. In claim 1, panelist data regarding both purchases made by panelists from the supplier of interest and purchases made by the panelists from the other suppliers is read, a relationship between the purchases made by the panelists from the supplier of interest and the purchases made by the panelists from the other suppliers is determined, customer data regarding purchases made by the customers from the supplier of interest is read, and based upon this customer data and the relationship, purchases made by the customers from the other suppliers are estimated. All data manipulations are concrete, and the result is a concrete output that is tangible to the supplier of interest.

Finally, the Examiner's attention is directed to Ex Parte Donner, 53 USPQ2d 1699, (Bd Pat App & Inter, 1999), in which the Board considered a claim to a computer implemented method of storing and analyzing input data so as to produce an estimated value as an output. The Board held that the step of determining the estimated value is a useful, concrete and tangible result.

Similarly, estimating purchases, as recited in the claims of the present application, is a useful, concrete and tangible result.

For all of the reasons given above, the invention of independent claim 1 is directed to statutory subject matter. Accordingly, independent claim 1 is directed to statutory subject matter as required by 35 U.S.C. §101.

Independent claim 30 is directed to a method in which customer data and panelist data are transformed into an estimate of the purchases made by the customers of one supplier from other suppliers. Accordingly, as in the case of independent claim 1, the invention of independent claim 30 involves the transformation of data into a tangible result and, therefore, is statutory subject matter. Consequently, independent claim 30 is patentable under 35 U.S.C. §101.

Independent claim 39 is directed to a method in which panelist data is transformed into a linear relationship and the linear relationship is transformed into an estimate of the purchases made by the customers of one supplier from other suppliers. Accordingly, as in the case of independent claims 1 and 30, the invention of independent claim 39 involves the transformation of data into a tangible result and, therefore, is statutory subject matter. Consequently, independent claim 39 is patentable under 35 U.S.C. §101.

Independent claim 43 is directed to an apparatus that transforms customer data and panelist data into an estimate of the purchases made by the customers of one supplier from other suppliers. Accordingly, as in the case of independent claims 1, 30, and 39, the

invention of independent claim 43 involves the transformation of data into a tangible result and, therefore, is statutory subject matter. Consequently, independent claim 43 is patentable under 35 U.S.C. §101.

8. Claims Appendix

The Appendix containing a copy of the claims involved in this appeal is attached hereto.

9. Evidence Appendix

There is no submitted evidence.

10. Related Proceedings Appendix

There are no other appeals or interferences known to Appellants, Appellants' legal representatives or assignees which will directly affect or be affected by or have a bearing on the Board's decision in the pending appeal.

11. Conclusion

For the foregoing reasons, reversal of the Final Rejection is respectfully requested.

The fee set forth in 37 C.F.R. §1.17(c) has been authorized to be charged to applicants' credit card. The Commissioner is hereby authorized to charge any deficiency in the amount enclosed or any additional fee which may be required to Deposit Account No. 50-1519.

Respectfully submitted,

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CLAIMS APPENDIX

1. A method of estimating purchases made by customers of a supplier of interest from other suppliers, wherein the method is performed on a computer, and wherein the method comprises the following steps:

a) reading panelist data regarding purchases made by panelists from the supplier of interest and purchases made by the panelists from the other suppliers, wherein the panelists are a subset of the customers, and wherein the purchases made by the panelists from the supplier of interest are independent of the purchases made by the panelists from the other suppliers;

b) determining a relationship between the purchases made by the panelists from the supplier of interest and the purchases made by the panelists from the other suppliers;

c) reading customer data regarding purchases made by the customers from the supplier of interest; and,

d) based upon the customer data and the relationship, estimating the purchases made by the customers from the other suppliers.

2. The method of claim 1 wherein step a) comprises the step of aggregating the panelist data according to categories, and wherein step (c) comprises the step of aggregating the customer data according to categories.

3. The method of claim 2 wherein the aggregated data includes a number of dollars that each panelist spent with the supplier of interest by category and a number of dollars that each panelist spent with the other suppliers by category.

4. The method of claim 3 wherein the aggregated data includes share for the supplier of interest and share for the other suppliers by category.

5. The method of claim 2 comprising the step of performing an unrotated principal components factor analysis on at least one of the aggregated panelist data and the aggregated customer data.

6. The method of claim 5 comprising the step of determining predictor variables based upon on at least one of the aggregated panelist data and the aggregated customer data.

7. The method of claim 6 wherein the predictor variables include the following: factors F_1 through F_i resulting from the performing step; a total number of trips in which dollars were spent in a category; and, a total number of dollars spent in a category.

8. The method of claim 7 wherein the predictor variables also include the following: the squares of the factors F_1 through F_i; interdependent factors based upon products of the factors F_1 through F_i; a square of the total number of trips; and, a square of the total number of dollars.

9. The method of claim 6 wherein the predictor variables include factors F_1 through F_i resulting from the performing step.

10. The method of claim 9 wherein the predictor variables also include the squares of the factors F_1 through F_i.

11. The method of claim 9 wherein the predictor variables also include interdependent factors based upon products of the factors F_1 through F_i.

12. The method of claim 6 wherein the predictor variables include a total number of trips in which dollars were spent in a category.

13. The method of claim 12 wherein the predictor variables also include a square of the total number of trips.

14. The method of claim 6 wherein the predictor variables include a total number of dollars spent in a category.

15. The method of claim 14 wherein the predictor variables also include a square of the total number of dollars.

16. The method of claim 6 comprising the step of determining criterion variables based upon at least one of the aggregated panelist data and the aggregated customer data.

17. The method of claim 16 wherein the step of determining criterion variables comprises the step of dividing the panelists into buckets and of determining the criterion variables as the number of panelists in each bucket.

18. The method of claim 16 comprising the steps of executing a routine in order to generate a set of scoring rules, and creating new predictor variables based upon the scoring rules.

19. The method of claim 18 wherein the step of creating new predictor variables based upon the scoring rules comprises the steps of inputting the panelist data and the customer data to the scoring rules by product category and by bucket of panelist IDs and summing an output of the scoring rules by product category and by bucket.

20. The method of claim 18 comprising the step of performing a linear regression based upon the new predictor variables and the criterion variables in order to generate the relationship, wherein the relationship is a linear relationship.

21. The method of claim 20 wherein step d) comprises the step of applying the customer data to the linear relationship.

22. The method of claim 1 comprising the step of performing an unrotated principal components factor analysis on at least one of the panelist data and the customer data.

23. The method of claim 22 comprising the step of determining predictor variables based upon on at least one of the panelist data and the customer data.

24. The method of claim 23 comprising the step of determining criterion variables based upon on at least one of the panelist data and the customer data.

25. The method of claim 24 comprising the step of performing a linear regression based upon the predictor variables and the criterion variables in order to generate the relationship, wherein the relationship is a linear relationship.

26. The method of claim 25 wherein step d) comprises the step of applying the customer data to the linear relationship in order to estimate the purchases made by the customers from the other suppliers.

27. The method of claim 1 comprising the step of performing an unrotated principal components factor analysis on the customer data.

28. The method of claim 27 comprising the step of performing a linear regression based upon the panelist data in order to generate the relationship, wherein the relationship is a linear relationship.

29. The method of claim 28 wherein step d) comprises the step of applying the customer data to the linear relationship.

30. A method of estimating purchases made by customers of a supplier of interest from other suppliers, wherein the method is performed on a computer, and wherein the method comprises the following steps:

a) reading customer data regarding purchases made by the customers from the supplier of interest;

b) reading panelist data regarding purchases made by panelists from the supplier of interest and purchases made by the panelists from the other suppliers, wherein the panelists are a subset of the customers, and wherein the purchases made by the panelists from the supplier of interest are independent of the purchases made by the panelists from the other suppliers;

c) based upon the customer data and the panelist data, estimating purchases made by the customers from the other suppliers.

31. The method of claim 30 wherein step c) comprises the step of aggregating the customer data and the panelist data according to categories.

32. The method of claim 31 wherein step c) comprises the step of performing an unrotated principal components factor analysis on at least a portion of the aggregated data.

33. The method of claim 32 wherein step c) comprises the step of determining predictor variables based upon the performing step and upon at least a portion of the aggregated data.

34. The method of claim 33 wherein step c) comprises the step of performing a linear regression on the predictor variables in order to generate a linear equation for each category.

35. The method of claim 34 wherein step c) comprises the step of estimating the purchases made by the customers from the other suppliers in each category by plugging the customer data into the linear equation for each category.

36. The method of claim 30 wherein step c) comprises the step of performing an unrotated principal components factor analysis based upon at least one of the panelist data and the customer data.

37. The method of claim 36 wherein step c) comprises the step of creating a linear equation based upon results from the unrotated principal components factor analysis.

38. The method of claim 37 wherein step c) comprises the step of estimating the purchases made by the customers from the other suppliers by plugging the customer data into the linear equation.

39. A method of estimating purchases made by customers of a supplier of interest, wherein the method is performed on a computer, and wherein the method comprises the following steps:

a) determining a linear relationship between purchases made by panelists from the supplier of interest and purchases made by the panelists from the other suppliers, wherein the purchases made by the panelists from the supplier of interest are independent of the purchases made by the panelists from the other suppliers; and,

b) estimating purchases by the customers from the other suppliers based upon the linear relationship.

40. The method of claim 39 wherein step b) comprises the step of estimating purchases from the other suppliers made by the customers of the supplier of interest based upon the linear relationship and purchases made by the customers from the supplier of interest.

41. The method of claim 39 wherein the panelists are a subset of the customers.

42. The method of claim 41 wherein step b) comprises the step of estimating purchases from the other suppliers made by the customers of the supplier of interest based upon the linear relationship and purchases made by the customers from the supplier of interest.

43. A system for estimating purchases made by customers of a supplier of interest comprising:

analyzing means for analyzing purchases made by the customers from the supplier of interest and purchases made by panelists from both the supplier of interest and other suppliers, wherein the panelists are a subset of the customers of the supplier of interest, and wherein the purchases made by the panelists from the supplier of interest are independent of the purchases made by the panelists from the other suppliers; and,

estimating means for estimating purchases by the customers from the other suppliers based upon the analyzed purchases.

44. The system of claim 43 wherein the analyzing means comprises means for performing an unrotated principal components factor analysis based upon purchase data.

45. The system of claim 44 wherein the analyzing means comprises means for determining a linear relationship based upon results from the unrotated principal components factor analysis.

46. The system of claim 45 wherein the linear relationship relates purchases made by the panelists from the supplier of interest to purchases made by the panelists from the other suppliers.

47. The system of claim 45 wherein the estimating means estimates the purchases by the customers from the other suppliers based upon the purchases by the customers from the supplier of interest and upon the linear relationship.

48. The system of claim 43 wherein the analyzing means comprises means for determining a linear relationship between purchases made by the panelists from the supplier of interest and purchases made by the panelists from the other suppliers.

49. The system of claim 48 wherein the estimating means estimates the purchases by the customers from the other suppliers by plugging the purchases by the customers from the supplier of interest into the linear relationship.

50. The method of claim 1 wherein the estimating of the purchases made by the customers from the other suppliers comprises estimating by product category the purchases made by the customers from the other suppliers.

51. The method of claim 30 wherein the estimating of purchases made by the customers from the other suppliers comprises estimating by product category the purchases made by the customers from the other suppliers.

52. The method of claim 39 wherein the estimating of purchases by the customers from the other suppliers based upon the linear relationship comprises estimating by product category the purchases made by the customers from the other suppliers based upon the linear relationship.

53. The system of claim 43 wherein the estimating means for estimating purchases by the customers from the other suppliers based upon the analyzed purchases comprises estimating means for estimating by product category the purchases by the customers from the other suppliers based upon the analyzed purchases.